********** STAFF WORKING DRAFT **********
********** DO NOT CITE OR QUOTE **********
16560-50 July 9, 1992

ENVIRONMENTAL PROTECTION AGENCY

40 CFR PART 52

[FRL-]

State Implementation Plans for Serious PM-10 Nonattainment Areas; Addendum to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990

AGENCY: Environmental Protection Agency (EPA).

ACTION: Addendum to General Preamble for future proposed rulemakings.

SUMMARY: To be added to final document.

FOR FURTHER INFORMATION CONTACT: Kenneth R. Woodard, Air Quality Management Division, Mail Drop 15, Office of Air Quality Planning and Standards, U.S. EPA, Research Triangle Park, North Carolina 27711, (919) 541-5697.

SUPPLEMENTARY INFORMATION: NOTE: In accordance with 1 CFR 5.9(c), this document is published in the proposed Rules category. References are available from the Public Docket No. A-92-23. The docket is located at the U.S. EPA Air Docket, Room M-1500, Waterside Mall, LE-131, 401 M Street, S.W., Washington, D.C. 20460. The docket may be inspected from 8:30 a.m. to 12 noon and from 1:30 p.m. to 3:30 p.m. on weekdays, except for legal holidays. A reasonable fee may be charged for copying.

TABLE OF CONTENTS

I. Introduction

Issues are discussed in this document regarding policy and guidance that will be applicable to areas that have been designated nonattainment for particulate matter having an aerodynamic diameter less than or equal to a nominal 10 microns (PM-10) and reclassified as serious areas.[1] Initially, all areas designated as nonattainment for PM-10 are classified as moderate areas [see section 188(a)]. Subsequently, in accordance with section 188(b)(1) of the Clean Air Act (Act) as amended November 15, 1990, "[t]he Administrator may reclassify as a Serious PM-10 nonattainment area . . . any area that the Administrator determines cannot practicably attain the national ambient air quality standard for PM-10 by the attainment date (as prescribed in subsection (c)) for Moderate Areas." The EPA proposed on November 21, 1991 (56 FR 58656) to reclassify as serious 14 moderate areas that were initially designated as nonattainment for PM-10 upon enactment of the 1990 Amendments.

This guidance document will be published as an addendum to the General Preamble for the Implementation of Title I of

---

[1]The 1990 Amendments to the Clean Air Act made significant changes to the air quality planning requirements for areas that do not meet (or that significantly contribute to ambient air quality in a nearby area that does not meet) the PM-10 national ambient air quality standards (see Pub. L. No. 101-549, 104 Stat. 2399). References herein are to the Clean Air Act, as amended, 42 U.S.C. §§7401 et seq.

the Clean Air Act Amendments of 1990 (General Preamble) published April 16, 1992 (57 FR 13498).[2] This serious PM-10 nonattainment area guidance document describes EPA's preliminary views on how EPA should interpret various provisions of Title I with regard to requirements for PM-10 serious area State implementation plans (SIP's). Although the guidance includes various statements that States must take certain actions, these statements are made pursuant to EPA's preliminary interpretations, and thus do not bind the States and the public as a matter of law. Of course, the use of prescriptive language is appropriate in those instances where the policy is simply reiterating statutory mandates which provide that States must take certain actions.

Possible approaches to implementing the general SIP requirements of section 172(c) and the specific requirements in Subpart 4 of Part D of Title I in serious PM-10 nonattainment areas, the issues involved and means of resolving those issues are discussed in the following sections. The topics discussed include treatment of international border areas; waivers for areas impacted by nonanthropogenic sources; SIP requirements such as

---

[2]A supplemental notice was published at 57 FR 18070, April 28, 1992, which provides certain appendices to the April 16, 1992 General Preamble. Subsequent references in this notice to the General Preamble are inclusive of both documents.

provisions to assure that best available control measures are implemented, requirements for quantitative milestones, reasonable further progress (RFP) and contingency measures.

II. Designations and Classifications

A. Designations

Section 107(d) of the Act provides generally for the designation of areas of each State as attainment, nonattainment or unclassifiable for each pollutant for which there is a national ambient air quality standard (NAAQS). Certain areas meeting the qualifications of section 107(d)(4)(B) of the Act were designated nonattainment for PM-10 by operation of law upon enactment of the 1990 Amendments (initial PM-10 nonattainment areas). A Federal Register notice announcing all of the areas designated nonattainment for PM-10 at enactment and classified as moderate was published on March 15, 1991 (56 FR 11101). A follow-up notice correcting some of these area designations was published August 8, 1991 (56 FR 37654). The boundaries of the nonattainment areas were formally codified in 40 CFR Part 81, effective January 6, 1992 (56 FR 56694, November 6, 1991). All those areas of the country not designated nonattainment for PM-10 at enactment were designated unclassifiable [see section 107(d)(4)(B)(iii) of the Act].

B. Classifications

Once an area is designated nonattainment, section 188

of the Act outlines the process for classification of the area and establishes the area's attainment date. In accordance with section 188(a), all PM-10 nonattainment areas are initially classified as moderate by operation of law upon their designation as nonattainment.

C. Reclassifications

1. General Conditions

A moderate area can subsequently be reclassified as a serious nonattainment area under two general conditions. First, EPA has general discretion under section 188(b)(1) to reclassify a moderate area as a serious area at any time the Administrator determines the area cannot practicably attain the NAAQS by the statutory attainment date for moderate areas.[3]

Second, under section 188(b)(2) a moderate area is reclassified as serious by operation of law after the statutory attainment date has passed if the Administrator finds that the area has not attained the NAAQS. The EPA must publish a Federal Register notice identifying the areas that have failed to attain and were reclassified, within 6 months following the attainment date [see section 188(b)(2)(B)].

2. Reclassification of Initial PM-10 Nonattainment Areas

Section 188(b)(1)(A) mandates an accelerated schedule

[3]See the detailed discussion of this provision in section III.C.1(b) of the General Preamble (57 FR at 13537-38).

by which EPA is to reclassify appropriate initial PM-10 nonattainment areas. The EPA proposed on November 21, 1991 (56 FR 58656) to reclassify 14 of the 70 initial moderate areas as serious. The 14 areas EPA proposed to reclassify were identified largely based on the magnitude and frequency of ambient PM-10 measurements above the 24-hour NAAQS of 150 micrograms per cubic meter ($\mu g/m^3$) during calendar years 1988 - 1990. The EPA presumed for the purpose of that proposal that areas with 24-hour design concentrations 58 percent or more above the NAAQS (greater than or equal to 237 $\mu g/m^3$) and with 6 or more expected exceedances of the 24-hour NAAQS could not practicably attain the standards by December 31, 1994, the statutory attainment date. The final decision to reclassify the areas proposed will be based on the criteria utilized in the proposal, comments received in response to the proposal and on information in the moderate area SIP's that were due on November 15, 1991 for each of the areas.

In the future, EPA anticipates that, generally, any proposal to reclassify an initial PM-10 nonattainment area before the attainment date will be based on the State's demonstration that the NAAQS cannot practicably be attained in the area by December 31, 1994 [the statutory attainment date specified in section 188(c)(1) for initial PM-10 nonattainment areas].

3. Reclassification of Future PM-10 Nonattainment Areas

In addition to EPA's general authority under section 188(b)(1) to reclassify as serious any area the Administrator determines cannot practicably attain the PM-10 NAAQS by the applicable date, for areas subsequently designated nonattainment for PM-10, subparagraph (B) of section 188(b)(1) mandates a timeframe within which EPA is to reclassify appropriate areas designated nonattainment subsequent to enactment of the 1990 Amendments. Appropriate areas are to be reclassified as serious within 18 months after the required date for the State's submission of a moderate area SIP [see section 188(b)(1)(B)].[4] Taken together with the statutory requirement that PM-10 SIP's are due at anytime EPA determines that an area cannot practicably attain the NAAQS by the applicable attainment date within 18 months after an area is designated nonattainment [see section 189(a)(2)(B)], the statute thus requires that EPA reclassify appropriate moderate areas as serious within 3 years of the nonattainment designation.

Because the moderate area SIP's are due before this reclassification deadline, EPA anticipates that any determination that such areas should be reclassified will be based upon the State's demonstration that the NAAQS cannot practicably be attained by the statutory deadline. In

[4]This directive does not restrict EPA's general authority but simply specifies that it must be exercised, as appropriate, in accordance with certain dates.

addition, delays in adopting, submitting, and implementing SIP requirements may be a basis for concluding that an area cannot practicably attain by the applicable date. For example, if a State fails to submit a PM-10 SIP, EPA could conclude that the area could not practicably attain the standards by the applicable attainment date based on the severity of the nonattainment problem, the feasibility of implementing control measures within the time allowed and other pertinent factors. Any decision by EPA to reclassify an area as serious will be based on facts specific to the nonattainment area at issue and will only be made after providing notice in the Federal Register and an opportunity for public comment on the basis for EPA's proposed decision.

The EPA does not believe that generally reclassifying moderate areas as serious rewards areas which delay development and implementation of PM-10 control measures. Rather, EPA believes its policy creates an incentive for the timely submittal and effective implementation of moderate area SIP requirements and facilitates the PM-10 attainment objective. For example, if an area that fails to submit a timely moderate area SIP is reclassified, this does not obviate the requirement that the area submit and implement the moderate area SIP requirements. Accordingly, the area could be subject to sanctions for its delay in submitting the moderate area SIP [see sections 110(m) and 179]. Also, reclassification before the applicable attainment date will

ensure that more stringent control measures are implemented sooner and will expedite the application of more stringent

new source review requirements to the area [see sections 189(b)(1) and 189(b)(3)].

III. International Border Areas

A. Statutory Requirement

Section 818 of the 1990 Clean Air Act Amendments added a new section, 179B, to Subpart 1, Part D of Title I. Section 179B applies to areas that could attain the relevant NAAQS by the statutory attainment date but for emissions emanating from outside the United States. For PM-10 nonattainment areas, section 179B(a) provides that EPA must approve the moderate area SIP if (1) the SIP meets all the applicable requirements under the Act other than a requirement that such plan or revision demonstrate attainment and maintenance of the PM-10 NAAQS by the applicable attainment date, and (2) the State demonstrates to EPA's satisfaction that the SIP would be adequate to attain and maintain the PM-10 NAAQS by the attainment date but for emissions emanating from outside the United States. In addition, section 179B(d) provides that if a State demonstrates that an area would have timely attained the PM-10 NAAQS but for emissions emanating from outside the United States, the area must not be subject to the reclassification provisions of section 188(b)(2). Section 188(b)(2) provides

that any moderate PM-10 nonattainment area that is not in attainment after the applicable attainment date shall be reclassified to serious by operation of law. Therefore, the statute provides that areas that could attain but for emissions emanating from outside the U.S. must not be reclassified as serious after failing to attain by the applicable date[5].

B. Policy

The State must show that an area is eligible to have its SIP approved and not be reclassified as serious under section 179B by evaluating the impact of emissions emanating

---

[5]As noted, section 179B(d) states that areas demonstrating attainment of the standards but for emissions emanating from outside the United States shall not be subject to section 188(b)(2) (reclassification for failure to attain). By analogy to this provision and applying canons of statutory construction, EPA will not reclassify before the applicable attainment date areas which can demonstrate attainment of the standards but for emissions emanating from outside the United States [see section 188(b)(1)]. First, section 179B evinces a general congressional intent not to penalize areas where emissions emanating from outside the country are the but-for cause of the PM-10 nonattainment problems. Further, if EPA were to reclassify such areas before the applicable attainment date, EPA, in effect, would be reading section 179B(d) out of the statute. Specifically, if EPA proceeded to reclassify before the applicable attainment date those areas qualifying for treatment under section 179B, an area would never be subject to the provision in section 179B(d) which prohibits EPA from reclassifying such areas after the applicable attainment date. Canons of statutory construction counsel against interpreting the law such that language is rendered mere surplusage. Finally, note that section 179B(d) contains a clearly erroneous reference to carbon monoxide instead of PM-10, and that this section contains other clear errors [see, e.g., section 179B(c) reference to section 186(b)(9), which does not exist].

from outside the United States and demonstrating that the SIP would bring about attainment but for those emissions. The impact of emissions emanating from outside the United States may be evaluated using a combination of the following techniques.

1. Inventorying the sources and comparing the magnitude of PM-10 emissions originating within the nonattainment area and those emanating from outside the United States;

2. Establishing an ambient PM-10 monitoring network (including directional samplers), both in the nonattainment area and across the border, based on guidance provided in 40 CFR, Part 58;

3. Analyzing ambient sample filters for pollutants emanating from across the border; and/or

4. Performing air dispersion and/or receptor modeling (receptor modeling combines the results of filter analysis with meteorological information) to quantify the relative impacts of the United States and foreign sources of PM-10 emissions.

The EPA will consider all of the information presented by the State for individual areas on a case-by-case basis in determining whether an area may qualify for treatment under section 179B.

In addition to demonstrating that the SIP for the area

would be adequate to timely attain and maintain the NAAQS but for emissions emanating outside the U.S., the SIP must continue to meet all applicable moderate area SIP requirements in order to qualify for the special SIP approval under section 179B. Among other things, the SIP must provide for the implementation of reasonably available control measures (RACM), including reasonably available control technology (RACT), to the extent necessary to demonstrate that the NAAQS could be attained in the nonattainment area by the applicable attainment date if emissions emanating from outside the United States were not included in the analysis. EPA believes that this interpretation of the degree of RACM the State is required to implement in moderate PM-10 areas affected by emissions emanating from outside the United States is consistent with the purpose of section 179B. By directing EPA, under section 179B, to approve the plan or plan revision of a moderate PM-10 area which shows it would attain the NAAQS but for foreign emissions and by excluding such an area from reclassification to serious, Congress clearly wanted to avoid penalizing such areas by not making them responsible for control of emissions emanating from a foreign country over which they have no jurisdiction. Moreover, by excluding the area from reclassification, Congress also elected to avoid subjecting such areas to the more stringent control measures applicable in serious PM-10 areas. In

addition, as set forth in section 179B(a)(2), the second condition which must be met before EPA may approve a moderate area plan showing attainment but for foreign emissions, by its plain terms, requires the State to establish only that the plan submitted would be "adequate" to timely attain and maintain the NAAQS, but for emissions from outside the United States. Nothing in section 179B relieves the State from meeting al its applicable moderate PM-10 SIP requirements, including the requirement to implement RACM. Nonetheless, if, in doing so, such an area were also required, because of contributions to PM-10 violations caused by foreign emissions, to shoulder more of a regulatory and economic burden than States not similarly affected by implementing measures which go well beyond those which the SIP demonstrates would otherwise be adequate to attain and maintain the PM-10 NAAQS, i.e., "super" RACM, such a requirement would unfairly penalize that area and effectively undermine the purpose of section 179B. Indeed, to the extent an affected State can satisfactorily demonstrate that implementation of such measures clearly would not advance the attainment date, EPA could conclude they are unreasonable and hence do not constitute RACM. Notwithstanding the above, in light of the overall health and clean air objectives of the Act, EPA does encourage affected States to reduce emissions beyond the minimum necessary to satisfy the <u>but for</u> test in order to reduce the

PM-10 concentrations to which their populations are exposed.

In addition to section 179B, the waiver policy, discussed below, could apply to an international border area if it is determined that nonanthropogenic sources of PM-10 within the United States significantly contribute to violations in the area [see section 188(f)].

IV. Serious Area SIP Requirements

New revisions must be made to the PM-10 SIP in accordance with section 189(b) of the Act for areas that are reclassified as serious nonattainment areas. First, provisions must be adopted to assure that BACM (including BACT) will be implemented in the area [see section 189(b)(1)(B)]. Second, a demonstration (including air quality modeling) must be submitted showing that the plan will attain the NAAQS either by the applicable attainment date or, if an extension is granted under section 188(e), by the most expeditious alternative date practicable [see section 189(b)(1)(A)].

The SIP revisions to require the use of BACM must be submitted to EPA within 18 months after an area is

reclassified as serious [see section 189(b)(2)]. The BACM are to be implemented no later than 4 years after an area is reclassified [see section 189(b)(1)(B)]. The EPA's policies regarding the requirement to implement BACM in serious areas are discussed in section VI of this document.

The serious area attainment demonstration required under section 189(b)(1)(A) must be submitted to EPA within 4 years after an area is reclassified based on a determination by EPA that the area cannot practicably attain by the statutory deadline for moderate areas. It is due within 18 months after an area is reclassified for actually having failed to attain by the moderate area attainment date [see section 189(b)(2)].

The new attainment date for initial PM-10 nonattainment areas that are reclassified as serious is to be as expeditiously as practicable but not later than December 31, 2001. For areas that are designated nonattainment for PM-10 in the future and subsequently become serious, the attainment date is to be as expeditiously as practicable but no later than the end of the tenth calendar year beginning after the area's designation as nonattainment [see section 188(c)(2)].

In addition to the specific PM-10 SIP requirements contained in Subpart 4 of Part D, Title I, States containing serious areas must meet all of the applicable general SIP requirements set forth in section 110(a)(2) and the

nonattainment area SIP requirements set forth in Subpart 1 of Part D, Title I to the extent that these provisions are not otherwise subsumed by, or integrally related to, the more specific PM-10 requirements.[6] The general SIP requirements applicable to all nonattainment areas are discussed in the General Preamble at 57 FR 13556-57.

Serious PM-10 nonattainment areas must meet, among other things, the following requirements which are discussed in this document:

a. current actual and allowable emissions inventories, that meet EPA guidelines (see section V below);

b. additional control measures beyond BACM, if necessary, in order to attain the NAAQS by the most expeditious date practicable (see sections 188(e) and 189(b)(1)(A)(ii));

c. contingency measures (see section VII below);

d. quantitative milestones that are to be achieved every 3 years until the area is redesignated attainment and which demonstrate RFP toward attainment of the NAAQS as required in section 189(c) of the Act (see section VIII below);

e. revised definitions for the terms "major source" and "major stationary source" as required in section 189(b)(3) of the Act;

---

[6]See 57 FR 13538 (April 16, 1992).

f. BACM for major stationary sources of PM-10 precursors except in those areas where EPA has determined that such sources do not contribute significantly to PM-10 levels which exceed the NAAQS (see 57 FR 13541-42).

The demonstration required under section 189(b)(1)(A) should follow the existing modeling guidelines addressing PM-10 (e.g., "PM-10 SIP Development Guideline" (June 1987); "Guideline on Air Quality Models" (Revised); memorandum from Joseph Tikvart and Robert Bauman dated July 5, 1990); and any applicable regulatory requirements. A supplementary attainment demonstration policy applicable to initial moderate PM-10 nonattainment areas facing special circumstances was issued in a memorandum from EPA's Office of Air Quality Planning and Standards to the Directors of EPA Regional Office Air Divisions on March 4, 1991.[7] That supplementary policy is not applicable to serious area SIP demonstrations.

If the State demonstrates that attainment by the statutory deadline for serious areas (as set forth in section 188(c) of the Act) is impracticable, the State must demonstrate that the SIP provides for attainment by the most expeditious alternative date practicable. The State may apply to EPA for an extension of the serious area attainment

[7]"PM-10 SIP Attainment Demonstration Policy for Initial Moderate Nonattainment Areas," memorandum from John Calcagni and William Laxton to Director, Air Division, EPA Regions I-X, March 4, 1991.

date under section 188(e) of the Act. A State requesting an extension under section 188(e) for an area must, among other things, demonstrate that the plan for the area includes the most stringent measures that are included in the implementation plan of any State or are achieved in practice in any State, and can feasibly be implemented in the area. The EPA will issue guidance in the future on applying for an extension of the serious area attainment date.

V. Waivers for Certain PM-10 Nonattainment Areas

A. 1990 Clean Air Act Amendments

The Act, as amended in November 1990, was designed to assure that attainment and maintenance of the PM-10 standards, which were promulgated in 1987 (52 FR 24634, July 1, 1987), be as expeditious as practicable. Thus, the Act requires States to submit several revisions of the SIP for PM-10 nonattainment areas, if necessary, to ensure attainment of the PM-10 NAAQS as expeditiously as practicable. The SIP revisions must first provide for the implementation of RACM on PM-10 sources. If RACM is not adequate to attain the NAAQS, subsequent revisions must provide for implementation of additional, more stringent control measures until the NAAQS are attained.

However, the Act also authorizes the Administrator of EPA to waive certain requirements for certain PM-10 nonattainment areas under the provisions of section 188(f). Congress apparently recognized that there may be areas where

the NAAQS may never be attained because of PM-10 emissions from "nonanthropogenic sources,"[8] and that the imposition of certain requirements in such areas may not significantly advance the PM-10 attainment objective.

Under section 188(f), the Administrator may waive a specific attainment date for areas where EPA determines that nonanthropogenic sources of PM-10 contribute significantly to the violation of the PM-10 NAAQS. The Administrator may also, on a case-by-case basis, waive any requirements applicable to serious areas under Subpart 4 of Part D of Title I where EPA determines that anthropogenic sources do not contribute significantly to the violation of the NAAQS in the area.

B. Historical Perspectives

1. Rural Fugitive Dust Policy

The EPA in the past has focused some of its air pollution control efforts on industrial point source emissions and other traditional sources of air pollution.[9]

---

[8]The legislative history of the 1990 Amendments indicates that Congress intended that the term "nonanthropogenic" sources of PM-10 refer to activities where the human role in the cause of such emissions is highly attenuated (see H.R. Rep. No. 490, 101st Cong., 2d Sess. 265 (1990)).

[9]The EPA distinguished between "traditional" and "nontraditional" sources. The term "nontraditional source" first appeared in official print in 1976 in EPA's "National Assessment of the Urban Particulate Problem," EPA-450/3-76-024, July 1976, and was coined as a catch-all to refer to those sources not traditionally considered in air pollution control strategies, including construction and demolition,

For instance, EPA's 1977 guidance on SIP development gave priority to control of urban fugitive dust on the grounds that (1) urban soil was believed to be contaminated and, therefore, potentially more harmful than the native soils in rural areas; (2) the potential for significant population exposures and attendant health effects was much greater in urban areas; and (3) scarce resources at the Federal, State, and local agency levels could be most effectively brought to bear on the more pronounced problems found in urban areas.[10] Accordingly, EPA's policy was to require greater control of emissions in urban areas, including control of fugitive dust from all major sources. In contrast, control requirements for rural areas were far less ambitious, focussing on the control of major industrial sources, with little attention given to natural or nonindustrial emissions. This policy of giving a lower priority to controlling natural or nonindustrial emissions in rural areas became known as the "Rural Fugitive Dust Policy."[11]

---

tailpipe emissions, tire wear, and various sources of fugitive dust. Since then, the use of the term has expanded to include such sources as prescribed agricultural and silvicultural burning, open burning, and residential wood combustion.

[10]"Guidance on SIP Development and New Source Review in Areas Impacted by Fugitive Dust," Edward F. Tuerk, Acting Assistant Administrator for Air and Waste Management, to Regional Administrators.

[11]See, e.g., "Model Letter Regarding State Designation of Attainment Status," David H. Hawkins, Assistant Administrator for Air and Waste Management to Regional

The EPA's policy focus shifted away from the type and location of the emission sources (i.e., traditional or nontraditional sources, urban or rural locations) to the size of the particles emitted when the indicator for the NAAQS was changed in 1987 from total suspended particulate matter to PM-10. While revisions to the rural fugitive dust policy were being considered, the policy was continued during the initial phases of implementing the PM-10 NAAQS on an interim basis.[12] However, EPA believes that the 1990 Amendments to the Clean Air Act provide a statutory alternative that wholly supplants the rural fugitive dust policy. See sections 107(d)(4)(B) and 188(f) of the amended Act; 56 FR 37659 (August 8, 1991).

C. Requirements to Attain the Standards

As noted previously, the Act requires States to submit several SIP revisions, if necessary, providing for implementation of increasingly stringent control measures and demonstrating when those control measures will bring about attainment of the PM-10 NAAQS. The first SIP revision was due November 15, 1991 for the initial PM-10 nonattainment areas. For areas redesignated nonattainment for PM-10 in the future under section 107(d)(3), the first SIP revision will be due within 18 months after the area is

---

Administrators, October 7, 1977; see also, "Fugitive Dust Policy: SIP's and New Source Review" (August 1984).

[12]See 52 FR 24716 (July 1, 1987).

redesignated [see section 189(a)(2)]. This SIP revision must, among other things, provide for implementation of RACM on sources in the area [see sections 189(a)(1)(C) and 172(c)(1)]. All technologically and economically feasible control measures would be considered RACM for areas that cannot attain the NAAQS by the December 31, 1994 attainment

date for initial moderate PM-10 nonattainment areas (see 57 FR 13544).[13]

If EPA determines that a moderate area cannot practicably attain the NAAQS by the applicable attainment date and reclassifies the area as a serious nonattainment area under section 188(b), a second SIP revision for the area is required under section 189(b). For example, within 18 months after the area is reclassified as serious the affected State must submit provisions to assure that available control measures (BACM) are implemented in the area no later than 4 years after the date the area is reclassified [see section 189(b)(1)(B)]. In addition, under section 189(b)(1)(A), the State must submit a demonstration of attainment for the area (or if the State is seeking an extension of the attainment date under section 188(e), a

[13]Note that if it can be shown that measures are unreasonable because emissions from the sources affected are insignificant or de minimis, such measures may be excluded from consideration as they would not represent RACM for that area. See 57 FR 13540.

demonstration that attainment by that date would be impracticable, and that the plan provides for attainment by the most expeditious alternative date practicable). Such demonstration is due within 4 years after an area is reclassified based on a determination by EPA that the area cannot practicably attain by the deadline for moderate areas or it is due within 18 months if the area is reclassified by operation of law for having failed to attain the NAAQS [see section 189(b)(2)].

Another SIP revision must be submitted if the State demonstrates to EPA, among other things, that the serious area cannot practicably attain by the statutory serious area attainment date described above. This revision must accompany an application for the attainment date to be extended under section 188(e) of the Act. The SIP revision must include a demonstration of attainment by the most expeditious alternative date practicable, not to exceed 5 years beyond the serious area attainment deadline. Further, the State must demonstrate, among other things, that the plan for the area includes the most stringent measures that are included in the plan of any State or are achieved in practice in any State, and can feasibly be implemented in the area.

If a serious area fails to attain by the applicable attainment date (which may be an extended attainment date), another SIP revision is required within 12 months that

provides for attainment and until then for annual reductions in PM-10 or PM-10 precursor emissions within the area of not less than 5 percent of the amount of such emissions as reported in the most recent emission inventory for the area [see section 189(d)].

D. Waiver Provisions

Due to the character of certain nonattainment situations, not all of the State planning efforts described above may be justified for some PM-10 nonattainment areas. Therefore, under section 188(f) of the Act, Congress provided a means for EPA to waive a specific date for attainment and certain control and planning requirements when certain conditions are met in the nonattainment area.

Section 188(f) allows two types of waivers. First, the Administrator may waive a specific date for attainment of the standards where EPA determines that nonanthropogenic sources of PM-10 contribute significantly to the violation of the standards in the area. Also, the Administrator may, on a case-by-case basis, waive any requirement under Subpart 4 applicable to any serious nonattainment area where EPA determines that anthropogenic sources of PM-10 do not contribute significantly to the violation of the standards in the area.

E. Issues

Several questions must be answered before the waiver provisions above can be used. Each of these questions are

discussed in the subsections that follow.

1. What types of sources should be considered anthropogenic and nonanthropogenic?

The legislative history of the 1990 Amendments indicates that Congress intended that the term "nonanthropogenic" sources of PM-10 refer to activities where the human role in the cause of such emissions is highly attenuated (see H.R. Rep. No. 490 at 265). Naturally occurring events such as wildfires, volcanic eruptions, unusually high pollen counts and high winds which generate dust from undisturbed land (e.g., the desert) are examples of nonanthropogenic sources that EPA believes meet the intent of Congress.

Anthropogenic sources of PM-10 emissions are those resulting from human activities. Some of the traditional and nontraditional anthropogenic sources generally considered in PM-10 SIP's are commercial, institutional, and residential fuel combustion; fossil fuel-fired electric power plants; industrial processes; vehicular traffic on paved and unpaved roads; construction activities; agricultural activities; and other sources of fugitive dust which are directly traceable to human activities and which are reasonably foreseeable incidents of such activities.[14]

---

[14]"PM-10 SIP Development Guideline," EPA-450/2-86-001, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, 1987, pp. 5-5, Table 5.1.

2. What criteria should be used in determining when nonanthropogenic sources contribute significantly and when anthropogenic sources do not contribute significantly to violation of the NAAQS in the area?

To determine the availability of a waiver under section 188(f), it must first be established whether anthropogenic source emissions do not and whether nonanthropogenic source emissions do contribute significantly to violation of the PM-10 NAAQS in the area. The Act does not define the term "contribute significantly" as it is used in section 188(f), nor does the legislative history provide any useful guidance.[15] Where a statute is silent or ambiguous with respect to the meaning of a statutory term, a reasonable agency interpretation of the term must be given deference by a reviewing court [see Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842-845 (1984)]. The EPA thus believes it has the authority to select appropriate criteria by which to determine when

[15]It should be noted, however, that the term "contribute significantly" (or variations of that term) has been interpreted differently throughout the Act, e.g., in the ozone/CO programs [see section 107(d)(4)(A)(iv) and (v)], the new source review (NSR) program, and in specific provisions of the statute, such as sections 110(a)(2)(D)(i)(I) and 126(a)(1)(B). An agency is permitted, but not required, to give a similar meaning to similar terms which appear in different parts of a statute. Thus, although EPA is not bound to adopt the interpretation given the term "contribute significantly" in other parts of the statute, it is likewise not precluded from according this use of similar language some interpretive weight.

nonanthropogenic/anthropogenic sources in an area do/do not "contribute significantly" to levels of pollution which exceed the NAAQS, as well as to consider for this purpose criteria utilized in other statutory contexts.

The criteria which EPA believes provides a reasonable approach to determining whether nonanthropogenic sources do and anthropogenic sources do not "contribute significantly" to violations of the PM-10 NAAQS in the area, as well as a

discussion of the basis for selecting these criteria, are set forth below.

In light of the different legal tests set forth in section 188(f), the EPA believes that no single numerical indicator of significance would serve the statutory purpose of encouraging protection of public health and welfare while avoiding unreasonable control actions. Further, the character and extent of anthropogenic and nonanthropogenic contributions--individually and in relation to each other--differ widely from one area to the next: meteorological and terrain characteristics have markedly different influences on various areas' tendencies to experience violations given a particular quantity of nonanthropogenic emissions; and different categories of nonanthropogenic emissions are more or less amenable to actions that can reasonably be taken to minimize their contributions to violations.

Generally, where a nonattainment area's anthropogenic

sources contribute very little to violations, it is likely that controlling those emissions to the extent feasible for the area will be insufficient to attain the NAAQS. In such cases, it would be unreasonable to require the area to implement more stringent and more expensive controls on anthropogenic sources since they would contribute little to attainment or to reducing the public's exposure to unhealthy air quality. In similar fashion, where nonanthropogenic emission contributions are great, even after the area has taken reasonable steps to reduce them, at some point it may not be feasible for the area to reduce nonanthropogenic (or anthropogenic) emissions sufficiently enough to effect any real change in ambient concentrations. Consequently, it would be unreasonable to require the area to continue to pursue control measures that are beyond the area's practicable abilities.

In selecting an appropriate "significance" contribution from anthropogenic sources, EPA has elected to rely on the test of significance that is applied under new source permitting programs. Under the NSR permit program, the EPA requires State permitting programs to consider new major sources or major modifications as causing or contributing to a violation of the PM-10 NAAQS when the source would add, at a minimum, over 5 $\mu g/m^3$ to the 24-hour average or over 1 $\mu g/m^3$ to the annual average PM-10 concentrations in an area that does not or would not meet the PM-10 NAAQS [see 40 CFR

51.165(b)]. Given that the purpose of new source permitting programs is also to protect air quality in both attainment and nonattainment areas, EPA believes that the test of significant contribution to violations under that program should also be applicable when determining significant contributions of anthropogenic sources under section 188(f) of the Act. However, in determining "significance" for purposes of section 188(f), the plain terms of that provision and its underlying purpose dictate that EPA consider the impact of the anthropogenic sources as a whole. Consequently, where emissions from all anthropogenic sources as a whole contribute less than or equal to 5 $\mu g/m^3$ to 24-hour average design concentrations and less than or equal to 1 $\mu g/m^3$ to annual mean design concentrations in a nonattainment area, after all RACM have been implemented,[16] EPA will conclusively regard such contributions as insignificant for purposes of waiving requirements applicable to serious PM-10 nonattainment areas pursuant to section 188(f).

If an area meeting this test has not yet been reclassified as serious and the area would qualify for a waiver of all of the serious area requirements (see

[16]Implementation of RACM (including RACT) is required in all moderate PM-10 nonattainment areas and that requirement is not waived under the provisions of section 188(f). Therefore, the issue is whether anthropogenic sources still contribute significantly to violations of the NAAQS in an area, after implementing RACM.

discussion below), EPA will not require reclassification, since the action would have no practical effect. If the contribution of anthropogenic emission sources to the 24-hour design concentration exceeds 5 $\mu g/m^3$, or if the contribution to the annual design concentration exceeds 1 $\mu g/m^3$, even after the application of all RACM, then the area should be reclassified as serious, and serious area requirements, including BACM, should be implemented.

As explained more fully in response to the third question below, note that special considerations apply to the determination whether nonanthropogenic sources contribute significantly to violation of the PM-10 NAAQS in a moderate area and whether such area therefore qualifies for an attainment date waiver. This is because the effect of waiving the attainment date for a moderate area is to relieve it of the serious area requirements. Thus, a moderate area may be subject to an attainment date waiver only if it also qualifies for a waiver of the serious area requirements. As provided in section 188(f), in order to qualify for such a waiver of the serious area requirements the moderate area must demonstrate that the anthropogenic sources in the area do not contribute significantly. Since this second test is more stringent, a moderate area that meets this test by demonstrating that anthropogenic sources do not contribute significantly will necessarily demonstrate that nonanthropogenic sources do contribute significantly.

These special considerations would not be relevant where EPA is determining whether to waive the attainment date for a serious area since waiving the date in such circumstances would not as a matter of course have the effect of relieving the area of the serious area requirements.

Because the basic purpose of Title I is to protect public health and welfare through attainment and maintenance of the NAAQS, EPA believes that before it may conclusively presume a serious area's nonanthropogenic emissions contribution to be significant, that contribution should by itself prevent the area from attaining the NAAQS after reasonable steps have been taken to reduce or minimize their impacts. Consequently, EPA will consider nonanthropogenic sources to contribute significantly only if, after the application of RACM to nonanthropogenic sources, their contribution to the 24-hour average design concentration exceeds 150 $\mu g/m^3$, or their contribution to the annual mean design concentration exceeds 50 $\mu g/m^3$.

Information derived from chemical and optical analysis of ambient filter catches, area emission inventories, and dispersion modeling to determine maximum source impacts can be used to evaluate the impact of anthropogenic and nonanthropogenic sources. Analysis of filters collected with a network of monitors over a long period (1 or more years) should reveal the portions of normal area PM-10 concentrations attributable to background, nonanthropogenic,

and anthropogenic sources, respectively.

3. Should moderate areas where nonanthropogenic sources contribute significantly to violation of the PM-10 NAAQS be reclassified as serious before EPA considers waiving the attainment date?

Section 188(f) contains two different legal standards. The first sentence applies to a waiver of the serious area requirements and requires that EPA determine that anthropogenic sources do not contribute significantly before EPA grants such a waiver. The second sentence applies to waiver of an area's attainment date and requires that EPA determine that nonanthropogenic sources contribute significantly before waiving the attainment date. As illustrated in the following example, the first test is more stringent than the second. Assume, for example, that nonanthropogenic sources contribute 60% of the problem in an area and that anthropogenic sources contribute 40%. In such case, nonanthropogenic sources are significant and the area would appear to qualify for an attainment date waiver. However, anthropogenic sources also would contribute significantly and therefore the area would not qualify for waiver of the serious area requirements. In fact, the area would need a much smaller contribution from anthropogenic sources (and correspondingly, a much larger contribution from nonanthropogenic sources) to qualify for the serious area requirements waiver.

The significantly disparate legal standards set out in 188(f) may lead to an absurd result. In particular, if a moderate area met the less stringent attainment date waiver test and the attainment date for the area was actually waived, the area would never be reclassified.[17] The result would be that a moderate area would be effectively relieved from the serious area requirements without having met the more stringent test that Congress expressly required be met as a prerequisite to a waiver of such requirements. The more stringent test for determining whether to waive serious area requirements would be rendered meaningless. Moderate areas would qualify for the attainment date waiver, be effectively relieved of all serious area requirements and never have to meet the required test for such waiver.

To avoid this absurd result and only grant a waiver of the serious area requirements consistent with the legal standard set out in the Act, EPA has construed section 188(f) in the following manner. A moderate area may only

---

[17]If EPA waives a specific attainment date for a moderate area consistent with its authority under section 188(f), the attainment date for the area will be vacated. Therefore, the moderate area would not be subject to reclassification under section 188(b) because there simply would be no attainment date that the area cannot practicably meet or that the area fails to meet. However, since section 188(f) only authorizes waiving the attainment date, the moderate area would still be subject to all the remaining moderate area SIP requirements. Therefore, the moderate area SIP submitted to meet the applicable requirements of subparts 1 and 4 should continue to provide for implementation of RACM.

qualify for an attainment date waiver if it also qualifies for a waiver of the serious area requirements. Therefore, EPA must determine that anthropogenic sources in the area do not contribute significantly to violation of the PM-10 NAAQS and the serious area requirements should be waived before EPA can grant an attainment date waiver for a moderate area. If such a determination is made, then the attainment date may be waived and the area would not be reclassified. Note, however, that an area already reclassified as serious could qualify for an attainment date waiver solely by showing that it meets the attainment date waiver test. And, consistent with the discussion in question 2 above, EPA would consider waiving the attainment date for a serious area if nonanthropogenic emissions alone prevent the area from attaining the PM-10 NAAQS.

4. For what period may a specific attainment date be waived?

When nonanthropogenic sources have been determined to contribute significantly to violations in an area, in accordance with the above criteria, those sources may permanently prevent the area from attaining the standards. Therefore, the attainment date for such areas could be waived indefinitely.[18] However, the phrase "waive a

[18]In cases where it is feasible to implement measures that will reduce future emissions from nonanthropogenic sources (i.e., planting indigenous vegetation or establishing wind breaks), EPA has the authority under

specific date" does not require that the attainment date be waived indefinitely, nor does it lessen the State's obligation to strive to expeditiously attain the NAAQS at some time in the future through available means. While EPA does not expect States to exhaust their resources to meet standards that may be unattainable, it does expect them to

continue efforts to minimize exposures to unhealthy air quality.

5. Should the area's emissions and control strategy be reviewed periodically to determine whether any factors have changed that would make it practicable to attain the NAAQS?

Even though a specific attainment date and serious area requirements may be waived indefinitely for an area where nonanthropogenic sources contribute significantly to violations and anthropogenic sources do not, the State should periodically review the status of anthropogenic and nonanthropogenic source contributions in the area. Such a review would entail determining whether nonanthropogenic sources still contribute significantly and anthropogenic sources do not contribute significantly to violation of the PM-10 NAAQS in the area. Since emissions from anthropogenic sources increase with population growth and new sources

---

section 188(e) to extend the attainment date for a serious area if it is possible that the NAAQS could be attained in the future. Such measures should be considered by States before seeking waivers of the attainment date.

being added to the area, the contribution of anthropogenic sources to violations can become significant over time. Therefore, the need for reinstating a specific attainment date and/or previously waived requirements should be reconsidered periodically.

The EPA has the authority under section 172(c)(3) to require periodic updates of the area's emissions inventory to assure that the requirements of Part D are met. The EPA plans to use this authority to periodically review the waiver status of areas, as described above. A specific attainment date and applicable requirements should be reinstated if it is determined that nonanthropogenic sources no longer contribute significantly or anthropogenic sources begin contributing significantly to violations in the area.

6. What requirements applicable to serious nonattainment areas under Subpart 4 of Part D should be waived?

The requirements applicable to serious areas under Subpart 4 are found primarily in section 189. Those requirements include:

a. submission of a SIP, under section 189(b)(1)(A), that includes a demonstration that the plan provides for attainment by the applicable attainment date [December 31, 2001 for the areas initially designated nonattainment for PM-10 by operation of law under section 107(d)(4) and no later than the end of the tenth year beginning after the

area's designation for areas subsequently designated nonattainment], or a demonstration that attainment by the above date is not practicable and that the plan provides for attainment by the most expeditious alternative date practicable;

b. provisions, under section 189(b)(1)(B), to assure that BACM will be implemented no later than 4 years after the area is reclassified as serious;

c. a requirement, under section 189(b)(3), that the terms "major source" and "major stationary source," used in implementing a new source permitting program under section 173 and control of PM-10 precursors under section 189(e), include any stationary source or group of stationary sources located within a contiguous area and under common control that emits, or has the potential to emit, at least 70 tons per year of PM-10;

d. quantitative milestones, [applicable to both moderate and serious area SIP's under section 189(c)], which are to be achieved every 3 years until the area is redesignated attainment, and which demonstrate RFP toward attainment by the applicable date. The provision includes a requirement for periodic reports demonstrating whether the milestones have been met;

e. annual reductions in inventoried PM-10 and PM-10 precursor emissions within the area of not less than 5 percent, under section 189(d), if the serious area fails

to attain the standards; and

f. as applicable, RACT-level, BACT-level, and new source review control of PM-10 precursors from major stationary sources of precursors in the airshed, [applicable to both moderate and serious area SIP's under section 189(e)].

The Subpart 4 requirements will be waived only on a case-by-case basis for serious areas where anthropogenic sources do not contribute significantly and have been controlled to the degree practicable. A decision by EPA to waive any Subpart 4 requirements in any area will likely be made only after providing public notice and an opportunity for comment on the bases for EPA's decision.

F. Waiver Policy Description

The EPA intends to implement its authority to grant waivers under section 188(f) in a manner described by the logic diagram presented in Figure 1. The figure presents six decision questions. A SIP submitted for a moderate nonattainment area seeking a waiver is expected to address the first three questions:

1. Can the area attain the NAAQS by the applicable statutory attainment date (December 31, 1994 for the initial nonattainment areas) after implementing RACM (including reasonably available control technology--RACT) for contributing anthropogenic and nonanthropogenic sources?

2. Do nonanthropogenic sources of PM-10 as a whole

contribute significantly to violations in the area?

3. Do anthropogenic sources of PM-10 as a whole contribute significantly to violations in the area?

If the moderate area SIP demonstrates that the area can attain with RACM (including RACT) by the attainment date, the answer to the first question is yes and the waiver provisions are not available. If the area cannot attain with RACM (including RACT) and nonanthropogenic sources do not contribute significantly to violations then, logically anthropogenic sources must contribute significantly by

Figure 1 to be placed here.

default. Therefore, the area would not qualify for a waiver of any kind under section 188(f).

If the area cannot attain with RACM (including RACT) and nonanthropogenic sources do contribute significantly to violations and, moreover, anthropogenic sources, after RACM (including RACT) have been implemented, will not contribute significantly, then the waiver provisions may be exercised.[19] A specific attainment date for the moderate area may be waived if the area would qualify for a waiver of all of the serious area requirements. The practical effect of waiving the attainment date for a moderate area is to relieve it from reclassification as serious and, therefore, to relieve it from all serious area requirements. However, the State should reevaluate the impact of anthropogenic sources on the area periodically to determine whether or not they contribute significantly to violations.

If the State determines that anthropogenic sources will still contribute significantly to violations after RACM (including RACT) are implemented, then the area will be reclassified as serious and will not qualify for waiver of any serious area requirements. However, the area may still

---

[19]Section 188(f) authorizes EPA to waive requirements applicable to serious areas and not the requirements applicable to moderate areas. Therefore, EPA believes the best reading of the statute requires that the emission reductions attributable to RACM (including RACT) should be considered before evaluating the significance of anthropogenic contributions.

be eligible for waiver of a specific serious area attainment date depending on the answers to questions 4, 5, and 6.

4. Can the serious area attain by the statutory deadline after implementing the serious area control strategy [i.e., BACM, (including BACT)], for significant anthropogenic sources?

5. Can the area attain with an extension of the attainment date?

6. Can the area attain in the future if PM-10 and PM-10 precursor emissions within the area, as reported in the most recent inventory, are reduced annually by not less than 5 percent?

If the answers to questions 4-6 are no and the area cannot attain the NAAQS by controlling emissions from anthropogenic sources and reducing emissions from nonanthropogenic sources, then a specific attainment date for the area may be waived.

However, if EPA determines that it is practicable for an area, where both nonanthropogenic and anthropogenic sources contribute significantly to violations, to attain the NAAQS at any time in the future, a specific attainment date would not be waived. Rather, the State would be expected to reduce emissions until the NAAQS are attained. The EPA may grant an extension of the attainment date for serious areas of no more than 5 years under the conditions

of section 188(e) of the Act.[20] Also, if the area fails to attain by the end of the extension period, the State must plan to achieve annual reductions of not less than 5 percent of PM-10 and PM-10 precursor emissions within the area, as reported in the most recent inventory [see section 189(d)].

VI. BEST AVAILABLE CONTROL MEASURES

A. Background

There are two circumstances, as discussed earlier, under which a moderate PM-10 nonattainment area may be reclassified as serious. First, an area may be reclassified whenever EPA determines that the PM-10 NAAQS cannot practicably be attained by the statutory attainment date.[21] Such a determination may be made before the attainment date if a review of the SIP for an area shows that RACM, including RACT, will not bring the area into attainment or if delays in adopting, submitting, and implementing SIP requirements form a basis for EPA to conclude that an area cannot practicably attain the NAAQS by the statutory attainment date. The second circumstance is when the area is reclassified by operation of law upon a determination by EPA that the area has failed to attain the NAAQS on schedule

---

[20]Guidance on demonstrating that a State qualifies for an attainment date extension will be issued in the future.

[21]The statutory attainment date for the initial group of areas designated nonattainment by operation of law upon enactment of the 1990 Amendments, under section 107(d)(4), is December 31, 1994.

[see section 188(b)].

Reclassification of an area as serious does not obviate the legal requirement to submit a moderate area SIP. The moderate area SIP must, among other things, provide for implementing RACM/RACT on PM-10 sources as required by section 189(a). The moderate area SIP's for the initial group of PM-10 nonattainment areas were due November 15, 1991. The EPA notified the Governors of any States that failed to submit moderate area SIP's of its intent to impose sanctions under section 110(m) and 179 of the Act and of the requirement for EPA to adopt a Federal implementation plan (FIP) under section 110(c) of the Act.[22] Once imposed, the sanctions will not be removed until the State has satisfied all the applicable PM-10 SIP requirements [see 56 FR 58658].

The EPA described RACM (including RACT) for moderate areas in the General Preamble (57 FR 13537-45 and 13560-61) as those available control measures that are reasonable considering their technological feasibility and the cost of control in the area to which the SIP applies, and considering the attainment needs of the area. The General Preamble also states that EPA considers it reasonable for a

[22]A finding of nonsubmittal was made by EPA in December 1991 if a SIP was not submitted for one of the initial moderate nonattainment areas. See 57 FR 19906 (May 8, 1992). Subsequently, at least one sanction under section 179(b) will be imposed in those areas within 18 months of the finding unless the deficiency is corrected.

State to adopt all available control measures that are technologically and economically feasible for areas that do not demonstrate attainment by the statutory deadline. See 57 FR at 13544. However, EPA believes it may be reasonable, in some limited circumstances, for States to consider the compatibility of RACT with BACT that will ultimately be implemented under serious area plans for those moderate areas which do not demonstrate attainment. Id. The EPA indicated in the General Preamble that for specific stack and process sources, installation of RACT-level controls may involve substantial capital costs for technology that is significantly incompatible with BACT-level technology. In the event that BACT is later required for those same sources, the installation of the first set of controls would be unreasonable. Accordingly, EPA indicated that SIP's for the initial moderate areas reclassified as serious in the mandatory reclassification rulemaking for initial areas need not require major changes to the control systems for specific stack and process sources where a State reasonably demonstrated that such changes would be significantly incompatible with the application of BACT-level control systems. A State's demonstration should include, for example, a showing of what the State believes are RACT and BACT for the source and why those technologies are significantly incompatible.

B. Requirement for Best Available Control Measures

As noted, additional control requirements are established in section 189(b) for PM-10 nonattainment areas that are reclassified as serious by EPA. Under section 189(b)(1)(B), States must provide for implementation of the best available control measures (BACM) for control of PM-10 emissions in such areas. The EPA believes the requirement to implement BACM in serious PM-10 nonattainment areas, should, in one key respect, be interpreted similarly to the comparable requirement, under section 189(a)(1)(C), to implement RACM in moderate PM-10 nonattainment areas.

In addition to the specific plan requirements contained in Subpart 4 of Part D of Title I for PM-10 nonattainment areas, section 172 (in Subpart 1) sets forth general statutory requirements which apply to all nonattainment areas. These general requirements clearly establish that the RACM requirement for plans required to be submitted under Part D of Title I must include reasonably available control technology (RACT). Section 172(c)(1) states that RACM for Part D nonattainment area plans shall include "such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology . . .." Thus, moderate PM-10 nonattainment area RACM plans, which are submitted to meet the requirements of section 189(a)(1)(C), must include provisions ensuring the adoption of RACT (see 57 FR 13540, Col. 1).

Under the PM-10 subpart, for areas reclassified as serious, the moderate nonattainment control requirements (i.e., RACM) are carried over and elevated to a higher level of stringency (i.e., BACM). So, by analogy, just as RACM includes RACT, in the same way, BACM includes BACT. Thus, just as moderate PM-10 SIP revisions when implementing RACM under section 189(a)(1)(C) must provide for the adoption of RACT, similarly, PM-10 SIP revisions under section 189(b)(1)(B), implementing BACM in serious PM-10 nonattainment areas, must include provisions ensuring the adoption of BACT. Even without the RACM analogy, the best available technological control measures by their plain terms are a subset of the universe of best available control measures. This point was explicitly addressed in the House Committee Report: "[S]erious areas must include in their submission provisions to require that the best available control measures for the control of PM-10 emissions are implemented no later than four years after the area is classified or reclassified as serious. Such provisions must include the application of the best available control technology to existing stationary sources." H.R. Rep. No. 490, 101st Cong., 2nd Sess. 266-67 (1990). The section 189(b)(1)(B) SIP revisions must be submitted to EPA within 18 months after an area is reclassified and must assure that the measures are implemented no later than 4 years after the area is reclassified as serious [see section 189(b)(1) and

189(b)(2)].

C. EPA's Historical Classification of Control Technology

The Act does not define the term BACM as it applies to serious PM-10 nonattainment areas. However, the Act does refer to different levels of emission control technology required for existing or new sources as "reasonable," "best," (i.e., RACT and BACT) and lowest achievable emission rate (LAER). It is helpful to consider EPA's interpretation and implementation of these control levels in determining the control level appropriate for BACM for serious PM-10 nonattainment areas.

The term "reasonably available" was applied to control measures and control technology required to be implemented at existing sources in nonattainment areas by the 1977 Clean Air Act Amendments. 42 U.S.C. 7502(c)(1). At that time, EPA defined RACT as the lowest emission limitation that a particular source is capable of meeting by the application of technology that is reasonably available considering technological and economic feasibility.[23] EPA determined control measures to be reasonable after considering their energy and environmental impacts and their annualized capital and operating costs. The cost of using a control

[23]See, for example, 44 FR 53726 (September 17, 1979) and footnote 3 of that notice. Note that EPA's emissions trading policy statement has certified that RACT requirements may be satisfied by achieving "RACT equivalent" emissions reductions from existing sources.

measure is considered reasonable if those same costs are borne by other comparable facilities. Since Congress did not modify EPA's interpretations of those earlier provisions of the Act dealing with RACM and RACT in the 1990 Amendments, it can be presumed to have given its endorsement to EPA's definition of the term.

Congress defined the term best available control technology (BACT) in section 169(3) of the 1977 Clean Air Act Amendments for use in implementing the requirement to prevent significant deterioration (PSD) of air quality under Part C of that Act. BACT is defined as an emission limitation based on the "maximum degree of reduction of each pollutant . . . emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques . . . for control of each such pollutant." Thus, BACT is to be determined for the PSD program on a case-by-case basis taking into account the energy, environmental, and economic impacts and other costs. Finally, section 169(3) also requires that BACT be at least as stringent as any corresponding new source performance standard (NSPS) or national emission standard for hazardous air pollutants (NESHAP).

Under the PSD program, BACT applies through preconstruction permits issued to major new and major modified facilities in areas where the air quality is better than the NAAQS. 42 U.S.C. 7475(a)(4). BACT is determined by identifying the technologically feasible control measures, from the universe of all available control techniques, which yield the maximum degree of emission reduction, after considering the energy, environmental and economic impacts of the technology, and other costs. This may include consideration of the annualized capital and operating costs for the facility. Of course, the costs of control for a major new facility or major modification of an existing facility are only a portion of the overall costs of the new investment which is a distinction between determining, "best available control" and determining "reasonably available control."

The term LAER refers to the level of control required for issuing a preconstruction permit to major new or major modified facilities in areas where the air quality is worse than the NAAQS (i.e., nonattainment areas). 42 U.S.C. 7503(a)(2) LAER is defined at 40 CFR 51.165(a)(1)(xiii) as the more stringent emission rate based on either the most stringent State emission limit or the most stringent emission limit achieved in practice by another source in that class or category of sources. Like BACT, the LAER level of control must be at least as stringent as the NSPS

applicable to the source. Unlike RACT and BACT, it is not necessary to consider energy or cost impacts adverse to the source in determining LAER. In general, the costs of achieving LAER in a nonattainment area must be considered as a portion of the overall cost of investing in a major new or major modified facility, as they are with BACT in attainment areas.

D. BACM for Serious PM-10 Nonattainment Areas

1. Definition

Although section 189(b)(1)(B) requires best available control measures (BACM) [including best available control technology (BACT)] to be implemented in serious PM-10 nonattainment areas, the Act does not define either BACM or BACT for PM-10 nonattainment purposes. The U.S. Supreme Court has held that where a statute is silent or ambiguous with respect to the meaning of a statutory term, a reasonable agency interpretation must be given deference by a reviewing court.[24] In considering how to reasonably

[24]Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 843-44 (1984). The Court's decision created a two-step statutory interpretation test. Under the first step, if the language of the statute is plain, "that is the end of the matter," and the agency and the courts must give effect to that plain meaning. If, under the second step, the statute is "silent or ambiguous" with respect to legislative intent, a court must defer to a permissible agency interpretation, unless that interpretation is "arbitrary, capricious, or manifestly contrary to the statute." If, further, the statute contains an explicit or implicit delegation of legislative authority to an agency, a court must defer to a "reasonable" agency interpretation.

interpret the provisions requiring BACM (including BACT) for serious PM-10 nonattainment areas, EPA has looked at several factors: the ordinary grammatical usage associated with the word "best," the way in which the terms have been interpreted in other sections or titles of the Act, and the overall structure and purpose of Title I of the statute.

A plain-English interpretation of the term "best" implies a generally higher standard of performance than one that may be considered "reasonable." In addition, the structural scheme throughout Title I of the Act is to require the implementation of increasingly stringent control measures in areas with more serious pollution problems, while providing such areas a longer time to attain the applicable standards. This structural scheme reflects a basic underlying premise of Title I, namely that tougher control measures are needed in cases where it appears that less stringent controls will be insufficient to bring a particular area into attainment and that, faced with such circumstances, it is reasonable, in light of the overall purpose of the Act, to require States to implement control measures of greater stringency, despite the greater burdens such measures are likely to incur. However, in those areas where more stringent controls are required, the Act attempts to balance the greater burden imposed by affording the State additional time to implement them.

For example, under section 188(e), EPA is given

authority to extend the attainment date for a serious PM-10 area beyond the specified statutory date, provided certain conditions are met, among them that the State must demonstrate to EPA's satisfaction that "the plan for that area includes the most stringent measures that are included in the implementation plan of any State or are achieved in practice in any State, and can feasibly be implemented in the area." Thus, although, under this section, the Act provides PM-10 serious areas an opportunity to get additional time to attain the NAAQS, the consequence of getting additional time is that the State must demonstrate that its PM-10 implementation plan contains the toughest extant control standard feasible, i.e., the "most stringent measures" that can feasibly be implemented in the relevant area from among those which are either included in any other SIP or have been achieved in practice by any other State. Similarly, the fact that the Act requires the application of control measures that are "reasonable" in moderate PM-10 nonattainment areas (RACM) and control measures that are "best" (BACM) whenever it is determined that a moderate area can't "practicably" attain or fails to attain the NAAQS and is therefore reclassified as serious and given a new, extended attainment date, is consistent with the overall statutory structure and, thus, strongly suggests that BACM is intended to be a more stringent standard.

Accordingly, for the reasons stated above, EPA believes

it is reasonable to conclude that Congress intended a greater level of stringency to apply in areas that are required to implement "best available" controls than in those required only to implement controls that are "reasonably available."

Furthermore, as noted earlier, an array of different control measures are applicable under various Title I programs. A key factor, among others, in determining the level of control appropriate for a given area from among the different emission control measures and technologies referred to throughout Title I is the severity of the air pollution problem in that area. In addition to the general categorization of areas as "attainment," "nonattainment," and "unclassifiable," the Act characterizes the severity of an area's air pollution problem by classifying the area, for example, as "marginal," "moderate," "serious," and so on. As discussed above, under Title I of the Act, the different control measures are required to be implemented as follows: as to new (or modified) sources, BACT applies in PM-10 unclassifiable areas under the PSD program, while LAER applies in moderate and serious PM-10 nonattainment areas under the nonattainment new source review (NSR) program; as to existing sources, RACM (including RACT) applies in moderate PM-10 nonattainment areas, while BACM (including BACT) applies in serious areas. In each case above, the more serious the pollution problem, the more stringent the

control standard that's required.

It is apparent that in requiring BACM to be applied to existing sources in serious PM-10 areas, Congress implied that these sources should be subject to a more stringent level of control than the RACM required to be applied to existing sources in moderate PM-10 nonattainment areas, but not as stringent as the LAER required to be applied to new or modified sources in moderate and serious areas. In view of this, EPA believes that, as a starting point in interpreting BACM (including BACT) for PM-10 nonattainment purposes, it is reasonable to consider BACT as applied in the PSD program under section 169(3) as an analogue. Under accepted principles of statutory interpretation, similar terms in a statute generally suggest a similar meaning, and an agency is permitted, but not required, to give a similar meaning to similar terms which appear in different parts of a statute. In the instant case, because PSD BACT and PM-10 BACM (including BACT) are similar terms, EPA does not believe it is unreasonable to assume that this use of similar language should be accorded some interpretive weight.

However, despite the similarity in terminology between control measures applicable in the two programs, certain key differences must be recognized. For example, PSD BACT applies only in areas already meeting the NAAQS, while PM-10 BACM applies in areas which are seriously violating the

NAAQS, a difference which, arguably, suggests that the latter should be a stricter control standard. On the other hand, under normal conditions, the burden, in the PSD context, of preventing the construction of (or even modifying) a new source would generally be less onerous than retrofitting an existing PM-10 source. Taken as a whole, the different regulatory and economic burdens in the latter context tend to offset the different policy purposes in the former. Nevertheless, EPA believes that the differences in policy goals--i.e., preventing further pollution under the PSD program and reducing existing pollution under the PM-10 nonattainment program--counsel against adopting the interpretation and implementation of PSD BACT in its entirety for PM-10 nonattainment purposes. Rather, EPA considers it reasonable to use the approach adopted in the PSD BACT program as defined in section 169(3) of the Act as an analogue for determining appropriate PM-10 nonattainment control measures in serious areas, while at the same time retaining the discretion to depart from that approach on a case-by-case basis as particular circumstances warrant.

BACM, therefore, is the maximum degree of emissions reduction for PM-10 and PM-10 precursors emitted from or which result from a major emitting facility which is determined on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, to be achievable for such facility through application of

production processes and available methods, systems, and techniques for control of each such pollutant. For PM-10, BACM must be applied to existing source categories in nonattainment areas that cannot attain within the moderate area timeframe.[25] Energy and environmental impacts of the control measures and the cost of control should be considered in determining BACM. In general, for the reasons stated above, the test of economic and technological feasibility will be higher for source categories in serious areas than for source categories in moderate areas because of the greater need for emission reductions to attain the NAAQS. As noted earlier, this interpretation is consistent with the overall statutory scheme, which requires, as an areas's air quality worsens, the adoption of increasingly stringent control measures in conjunction with the area receiving more time to attain the NAAQS. Thus, measures that were not considered reasonable to implement by the moderate area attainment date, may be BACM for serious areas

[25]The term "source categories" for which BACM will be required, refers to categories of area-wide sources or large individual stationary sources of PM-10 or PM-10 precursor emissions that may be regulated under a specific rule, generic emission limit, or standard of performance, or a specific control program in a SIP. For example, the SIP may regulate emissions from unpaved roads, construction activities, residential wood combustion, asphalt concrete batch plants, etc., as source categories. Note that in some instances an entire source category may consist of one large individual stationary source that is regulated separately under the SIP such as a single iron and steel manufacturing facility and the various processes therein.

because of the additional time available for implementing them[26] and because of the higher degree of stringency implied by the statutory scheme and the term "best." Therefore, BACM could include, though it is not limited to, expanded use of some of the same types of control measures as those included as RACM in the moderate area SIP.

2. Preventive Measures

The EPA considers measures that prevent PM-10 emissions over the long-term (e.g., requiring gas logs in new fireplaces) to be preferable to those measures that will only temporarily reduce emissions (e.g. curtailment of woodstove use during air pollution episodes or treatment of fugitive dust sources with water). This is because such measures are inherently more reliable and involve significantly fewer resources for surveillance, enforcement, and administration. Moreover, increasing emphasis on prevention over mitigation is more likely to be both economically and environmentally beneficial over the long term.

3. De Minimis Source Categories

BACM are required for all categories of sources in

---

[26]The statutory attainment date for initial moderate PM-10 nonattainment areas reclassified as serious will be December 31, 2001. For areas designated nonattainment subsequent to enactment of the 1990 amendments that become serious, the attainment date will be before the end of the tenth year beginning after the area's designation as nonattainment [see section 188(c)].

serious areas unless the State conclusively demonstrates that additional control of a particular source category would not contribute significantly to accelerating attainment of the NAAQS. While EPA regards the BACM standard applicable in PM-10 serious areas as a more stringent control standard which calls for a greater degree of emissions control for the source categories to which it applies, EPA also believes that it has the authority to limit the applicability of BACM to those source categories which "contribute significantly" to the nonattainment problem. The Act leaves unresolved the question of whether BACM is intended to be an all-inclusive requirement applicable to every PM-10 serious area source category. It should be noted that in section 189(b)(1)(B), which contains the requirement that serious area PM-10 SIP's provide for the implementation of BACM, Congress has not used the word "all" in conjunction with BACM. Congress has also not stated, either expressly or impliedly, anywhere in the relevant law or legislative history that BACM must be applied to all serious area source categories. Even if EPA was required to impose BACM on all source categories in serious PM-10 areas, the Agency believes it has the authority to exempt from regulation those source categories in the area which contribute only negligibly to ambient concentrations which exceed the NAAQS. The inherent authority of administrative agencies to exempt de minimis

situations from a statutory command has been upheld in contexts where an agency is invoking a de minimis exemption as "a tool to be used in implementing the legislative design" on the ground that "the burdens of regulation yield a gain of trivial or no value." Alabama Power Co. v. Costle, 636 F.2d 323, 360-61 (D.C. Cir. 1979). The EPA believes the court's test for invoking the de minimis exemption authority would be satisfied in circumstances where a State demonstrates conclusively that the imposition of additional controls, such as BACM, on a particular source category in the area would not contribute significantly to the Act's purpose of achieving attainment of the NAAQS "as expeditiously as practicable."[27] The EPA will have to demonstrate from the record that, with respect to particular serious area PM-10 source categories which contribute to emissions in excess of the NAAQS, requiring application of BACM would produce an insignificant regulatory benefit. Id.

The EPA will, in general, rely on the criteria applied under new source permitting programs [40 CFR 51.165(b)] to determine when a source category contributes significantly to violations of the NAAQS in a serious nonattainment area.

---

[27]The Sixth Circuit, in Air Pollution Control District of Jefferson County, Kentucky v. U.S.E.P.A., 739 F.2d 1071, 1093 (6th Cir. 1984), deciding the extent to which one State should be held accountable for contributing to levels of air pollution in excess of the NAAQS in another State, held that the term "significantly contributes" does not extend to de minimis contributions.

The criteria will also be applied spatially and temporally in the same way it is under new source permitting programs.[28]

As discussed above, a moderate PM-10 nonattainment area may be reclassified as serious based on evidence that the area cannot practicably attain the NAAQS by the statutory attainment date or evidence that it has failed to attain by that date. The evidence, whether modeled or measured, will generally indicate the standard (24-hour or annual), the day, and the location of the expected violation. Therefore, under this policy, a source category (see footnote 25) will be presumed to contribute significantly to a violation of the 24-hour NAAQS if its PM-10 impact at the location and for the year of the expected violation would exceed 5 $\mu g/m^3$. Likewise, a source category will be presumed to contribute significantly to a violation of the annual NAAQS if its PM-10 impact at the time and location of the expected violation would exceed 1 $\mu g/m^3$.

Procedures for identifying source categories that continue to significantly affect the air quality of a serious area [even after RACM (including RACT) are implemented] and procedures for identifying the appropriate

[28]See "Interpretation of `Significant Contribution,'" memorandum from Richard G. Rhoads to Alexandra Smith, December 16, 1980, OAQPS Policy and Guidance Notebook, PN 165-80-12-16-007.

mix of control measures applicable to those source categories are discussed below in section E.

4. Independent of Attainment Needs

The overall structure and purpose of Title I of the amended Act, the standard suggested by the word "best," and differences in the statute between the requirements for BACM as compared to those for RACM lead EPA to believe that unlike RACM, BACM are to be established generally independent of an analysis of the attainment needs of the serious area.

As noted earlier in this section, the overall structural scheme throughout Title I of the Act is to require the implementation of increasingly stringent control measures in areas with more serious pollution problems, while providing such areas a longer time to attain the applicable standards. These tougher measures are deemed necessary in cases where it appears that less stringent controls will be insufficient to reduce emissions in an area to the level of the NAAQS. The fact that the Act requires the application of control measures that are "reasonable" in moderate PM-10 areas and control measures that are "best" whenever it is determined that a moderate area can not "practicably" attain or actually fails to attain the NAAQS and is therefore reclassified as serious strongly suggests that BACM is intended to be a more stringent standard than RACM. This being so, it is reasonable to interpret the

statute as requiring a different analysis for determining BACM from the practice in the moderate area context of analyzing RACM, according to what is reasonable in light of the overall attainment needs of the area. Moreover, it is hard to avoid the conclusion, when comparing the terms "reasonable" and "best" as applied to control measures, that the word "best" strongly implies that there should be a greater emphasis on the merits of the technology alone and less flexibility in considering other factors.

Additionally, for PM-10 areas reclassified as serious before the moderate area attainment date, States have up to 4 years, under section 189(b)(1)(A), in which to submit their serious area attainment demonstration. However, under section 189(b)(2), States must submit their plans requiring the use of BACM for those same areas within 18 months after reclassification from moderate to serious. Thus, for such areas, Congress provided a difference of as much as 2 1/2 years between the required date for submitting BACM plans and the date by which to submit a new attainment demonstration satisfying the requirements of section 189(b)(1)(A) for areas reclassified as serious before the moderate area attainment date. This pronounced difference in timing for the serious area submittals described above is to be contrasted with the timing for submittal of similar provisions for moderate areas. Under section 189(a)(2)(B), both the RACM plans and the attainment demonstration for

moderate PM-10 areas which are designated nonattainment subsequent to the initial designations must be submitted at the same time. The fact that the Act requires BACM to be adopted and implemented (at least initially for areas that are reclassified before the moderate area attainment date) by an appreciable time before the attainment demonstration is required suggests that Congress intended that BACM determinations be based more on the feasibility of implementing the measures rather than on an analysis of the attainment needs of the area. The EPA believes this interpretation of the Act is reasonable, even if, as to areas which are classified in the future as serious PM-10 nonattainment areas, for example, the difference in timing between the date BACM plans must be submitted and the date the serious area attainment demonstration is due should happen to be less pronounced, since there is no rational basis for interpreting BACM differently depending merely on when an area happens to be reclassified. Therefore, the steps described below for making a BACM determination are intended to be carried out independently from the analysis to determine the emission reductions that would be necessary to merely attain the NAAQS by the statutory deadline. If the attainment demonstration for the area subsequently shows that BACM will bring the area into attainment before the statutory deadline, then the plan provides for attainment of the NAAQS as expeditiously as practicable. However, if the

BACM are not adequate to meet the standards by December 31, 2001, then the State may request an extension under section 188(e) which requires, among other things, a demonstration that the plan for the area includes the most stringent measures included in a SIP for any State or achieved in practice by any State, and can feasibly be implemented in the area.

E. Procedures for Determining Best Available Control Measures

1. Inventory Sources of PM-10 and PM-10 Precursors

The BACM (including BACT) applicable in a nonattainment area must be determined on a case-by-case basis since the nature and extent of a nonattainment problem may vary within the area and from one area to another. Nonattainment problems range from reasonably well-defined areas of violation caused by a specific source or group of sources to violations over relatively broad geographical areas due predominantly to large numbers of small sources widely-distributed over the area. BACM are required for all source categories for which the State cannot conclusively demonstrate that their impact is de minimis. As stated above, the EPA will generally presume the contribution to nonattainment of any source category to be de minimis if the source category causes a PM-10 impact in the area of less than 5 $\mu g/m^3$ for a 24-hour average and less than 1 $\mu g/m^3$ annual mean concentration.

The starting point for making a BACM determination would be to reevaluate the emission inventory submitted with the moderate area SIP. Section 172(C)(3) of the Act calls for all nonattainment areas to submit comprehensive, accurate, and current emissions inventories. If there have been any significant changes in PM-10 sources in the area since the inventory was first compiled (i.e., sources permanently shutdown or new sources started) or if the inventory is not adequate to support the more rigorous analysis required for serious area SIP demonstrations, it should be revised. All anthropogenic sources of PM-10 emissions and PM-10 precursors (if applicable)[29] and nonanthropogenic sources in a nonattainment area should be included in the emission inventory.

Because of its importance in identifying anthropogenic and nonanthropogenic sources and the applicability of BACM requirements, the breakdown of sources to consider when compiling an emissions inventory are as follows:

- Major point sources (i.e., sources with the potential to emit at least 70 tons per year of PM-10 (or PM-10 precursors) as required in sections 189(b)(3) and 189(e) of the Act);
- Minor point source categories; and

[29]Ambient filter analysis and inventory information were to be presented in the moderate area SIP to indicate the significance of secondary particles (see 57 FR 13541-42).

- Area source categories such as fugitive dust from anthropogenic sources (e.g., construction activities, paved and unpaved roads, agricultural activities, etc.), residential wood combustion, prescribed burning, and commercial/institutional fuel combustion; and
- Nonanthropogenic sources.

2. Evaluate Source Category Impact

The second step in determining BACM for an area is to identify those source categories having greater than a de minimis impact on PM-10 concentrations. The potential maximum impact of various source categories may have been determined with receptor or dispersion modeling performed for the attainment demonstration submitted with the moderate area SIP. In addition, the impact of some source categories may be apparent from analysis of ambient sampling filters from days when the standards are exceeded. If modeling was not performed during development of the moderate area SIP, receptor modeling, screening modeling or, preferably, refined dispersion modeling will be necessary at this time to identify key source categories.

3. Evaluate Alternative Control Techniques

In developing a fully adequate BACM SIP, the State is expected to evaluate the technological and economic feasibility of the control measures discussed in the BACM guidance documents and other relevant materials for all

source categories impacting the nonattainment area except those with a de minimis impact considering emission reductions achieved with RACM.

As distinct from the surfaces on which they travel, it does not currently appear that mobile sources contribute significantly to the PM-10 air quality problem in a sufficient number of areas to warrant issuing national guidance on best available transportation control measures for PM-10 under section 190 of the Act. However, in those areas where mobile sources do contribute significantly to PM-10 violations, the State must consider implementing transportation control measures, including those listed in section 108(f) of the Act, and explain why measures that are not adopted are not needed in or appropriate to the area.

The technological feasibility of reducing emissions from area sources depends on the ability to alter the characteristics that affect emissions from the sources. Those characteristics have to do with the size or extent of the sources, their physical characteristics and the operating procedures. Reducing emissions of fugitive dust from construction activities, for example, could require the most effective combination of reducing the size of the sources (i.e., acres cleared at one time or vehicle miles traveled on unpaved surfaces), changing the physical characteristics (i.e., silt loading on travel surfaces or moisture content of materials handled), and/or changing the

operating practices (i.e., lower vehicle speeds, less surface area exposed to the wind, treating or paving travel surfaces).

The technological feasibility of applying an emission reduction method to a particular point source should consider the source's process and operating procedures, raw materials, physical plant layout, energy requirements, and any collateral environmental impacts (e.g. water pollution and waste disposal). The process, operating procedures, and raw materials used by a source can affect the feasibility of implementing process changes that reduce emissions and the selection of add-on emission control equipment. The operation of and longevity of control equipment can be significantly influenced by the raw materials used and the process to which it is applied. The feasibility of modifying processes or applying control equipment is also influenced by the physical layout of the particular plant. The space available in which to implement such changes may limit the choices and will also affect the costs of control.

4. Evaluate Costs of Control

Economic feasibility considers the cost of reducing emissions from a particular source category and costs incurred by similar sources that have implemented emission reductions. As it has done under RACT determinations and in BACT/LAER analyses in other statutory contexts, EPA believes for PM-10 BACM purposes as well that it is reasonable for

similar sources to bear similar costs of emission reduction. As such, when identifying BACM, consideration of economic feasibility need not emphasize claims regarding the ability of a particular source to "afford" to reduce emissions to the level of similar sources. Otherwise, less efficient sources might be rewarded for their inefficiency by being allowed to bear lower emission reduction costs. Instead, economic feasibility for PM-10 BACM purposes should focus upon evidence that the control technology in question has previously been implemented at other sources in a similar source category.

Another approximate way to consider economic feasibility is by analyzing the cost per unit of incremental reduction of PM and/or its precursors by one particular control option as compared to the next most stringent option. That incremental cost may be evaluated in determining whether it is appropriate under the circumstances and considering other factors.

Where the economic feasibility of a measure (e.g., road paving) depends on public funding, EPA will consider past funding of similar activities as well as availability of funding sources to determine whether a good faith effort is being made to expeditiously implement the available control measures. In other words, if 20 miles of unpaved roads are typically paved each year, then the BACM fugitive dust program should include paving no less than 20 miles per year

of existing roads and offer evidence of ambitious efforts to increase funding and increase the priority for use of existing funds.

The capital costs, annualized costs, and cost effectiveness of an emission reduction technology should be considered in determining its economic feasibility. The "OAQPS Control Cost Manual, Fourth Edition," EPA-450/3-90-006, January 1990, describes procedures for determining these costs. The above costs should be determined for all technologically feasible emission reduction options.

F. Selection of BACM for Area Sources

Once the significant PM-10 area source categories have been identified, the State should select area source control measures from the BACM listed in the technical information documents for fugitive dust, RWC, prescribed burning or any other technical information documents issued by EPA. This guidance is based on EPA's analysis of available control alternatives for the identified source categories. While the guidance is intended to be comprehensive, it is by no means exhaustive. Consequently, the State is encouraged to consider other sources of information and is not precluded from selecting other measures and demonstrating to the public and EPA that they constitute BACM.

As stated earlier, EPA considers measures that prevent PM-10 emissions over the long term to be preferable to short-term curtailment measures. Therefore, when selecting

BACM for area sources, a State should first consider pollution preventive measures and measures that provide for long-term sustained progress toward attainment in preference to quick, temporary control. For example, a State should consider adopting programs to encourage or require replacement of old woodstoves with cleaner burning woodstoves or alternative fuels over time. Such programs would complement and reduce dependance on wood-burning curtailment programs adopted as RACM for the moderate area SIP. However, EPA recognizes that such long-term measures may entail significant lead time and that temporary measures like wood-burning curtailments may need to be continued in serious areas, at a minimum, to provide interim health protection.

Once the list of available measures for an area source has been identified, the State must evaluate the technological and economic feasibility of implementing the controls. The State may refer to the technical information documents for procedures to determine feasibility.

When evaluating economic feasibility, States should not restrict their analysis to simple acceptance/rejection decisions based on whether full application of a measure to all sources in a particular category is feasible. Rather, a State should consider implementing a control measure on a percentage of the sources in a category if it is determined that 100 percent implementation of the measure is

infeasible. This would mean, for example, that an area should consider the feasibility of paving 75 percent of the unpaved roadways even though paving all of the roads may be infeasible. Alternatively, the State should consider whether measures not feasible to be implemented in their entirety prior to the statutory deadline could be completed over an extended period.

The following example is presented to illustrate how a moderate area program of RACM for fugitive dust control may be complemented with additional BACM after the area is reclassified as serious. Assume that the following control measures were adopted as RACM:

- Reduce the speed limit on unpaved county roads to 25 miles per hour;
- Treat all unpaved county roads, monthly, with chemical dust suppressants within 500 feet of their intersections with paved roads;
- Treat 10 miles of the most heavily traveled unpaved county roads with chemical dust suppressants once per month;
- Pave 4 miles of unpaved city streets;
- Treat unpaved parking lots in the city with chemical dust suppressants once per month; and
- Clean anti-skid materials from 50 miles of city streets within 48 hours after snow melt begins.

The same area, after being reclassified as serious, may adopt the following BACM to complement the RACM program:

o Pave 10 miles of the most heavily traveled unpaved county roads;

o Treat 10 miles of unpaved county roads with chemical dust suppressants once per month;

o Pave 25 unpaved county roads within 500 feet of their intersections with paved roads;

o Chemically treat or pave both shoulders of 30 miles of State highways within the county;

o Pave all parking lots within the city;

o Revise the specifications for winter anti-skid materials to require cleaner, less friable materials, and reduce the quantity used per lane-mile;

o Require crop rotations on highly erodible lands;

o Retire 1000 acres of farmland and plant indigenous vegetation as a cover instead of leaving land fallow;

o Plant crops and windbreaks across the prevailing wind direction on highly erodible lands.

In summary, the State must document its selection of BACM by showing what control measures applicable to each source category (not shown to be de minimis) were considered. The control measures selected should preferably be measures that will prevent PM-10 emissions rather than temporarily reduce them. The documentation should compare the control efficiency of technologically feasible measures, their energy and environmental impacts and the costs of

implementation.

G. Selection of BACT for Point Sources

The reviewing authority determines BACT on a case-by-case basis. It selects an emissions limitation that reflects the maximum degree of reduction of each pollutant subject to regulation, taking into account energy, environmental, and economic impacts and other costs, that it determines is achievable for such facility. In no event may a technology be selected that would not meet any applicable standard of performance under 40 CFR 60 [new source performance standards (NSPS)] or 61 [national emission standards for hazardous air pollutants (NESHAP)].

In so doing, two core criteria are critical. First, the range of available control technologies must be considered including the most stringent. Second, the ultimate selection must be justified relative to the other control options, and according the relevant factors.

In addition, if the reviewing authority determines that there is no economically-reasonable or technologically-feasible way to accurately measure the emissions, and hence to impose an enforceable emissions standard, it may require the source to use design, alternative equipment, work practice, or operational standards to reduce emissions of the pollutant to the maximum extent [40 CFR 52.21(b)(12); 40 CFR 51.166(b)(12)].

Alternative approaches to reducing emissions of

particulate matter including PM-10 are discussed in "Control Techniques for Particulate Emissions From Stationary Sources" - Volume I (EPA-450/3-81/005a) and Volume II (EPA-450/3-81-005b), September 1982. The design, operation, and maintenance of general particulate matter control systems such as mechanical collectors, electrostatic precipitators, fabric filters, and wet scrubbers are discussed in Volume I. The collection efficiency of each system is discussed as a function of particle size. Information is also presented regarding energy and environmental considerations and procedures for estimating costs of particulate matter control equipment. The emission characteristics and control technologies applicable to specific source categories are discussed in Volume II. Secondary environmental impacts are also discussed.

The BACT/LAER Clearinghouse, the EPA Control Technology Center, and past BACT analyses for new and modified major sources under the PSD program may be used to assist in identifying available control options and maximum achievable emission reductions. The EPA will continue to evaluate the need for additional guidance and will produce additional materials as appropriate.

VII. CONTINGENCY MEASURES

Section 172(c)(9) requires that SIP's provide for specific measures to be undertaken if the Administrator finds that the nonattainment area has failed to make RFP

toward attainment or to attain the NAAQS by the applicable statutory deadline. Following the Administrator's finding,

the measures are to take effect immediately without the further action by the State or EPA.

The EPA interprets this requirement to be that no further rulemaking actions by the State or EPA would be needed to implement the contingency measures [see generally 57 FR 13512 and 13543-544]. The EPA recognizes that certain actions, such as the notification of sources, modification of permits, etc., would probably be needed before a measure could be implemented. However, States must show that their contingency measures can be implemented with minimal further action on their part and with no additional rulemaking actions such as public hearings or legislative review. After EPA determines that a moderate PM-10 nonattainment area has failed to attain the PM-10 NAAQS, EPA generally expects all actions needed to affect full implementation of the measures to occur within 60 days after EPA notifies the State of the area's failure. The State should ensure that he measures are fully implemented as expeditiously as practicable after they take effect.

The purpose of contingency measures is to ensure that additional measures beyond or in addition to the required control measures immediately take effect when the area fails to make RFP or to attain the PM-10 NAAQS in order to provide

interim public health and welfare protection. The protection is considered "interim" because the statute often provides for a more formal SIP revision in order to correct, for example, the failure of an area to attain the PM-10 NAAQS. E.g., section 189(b) (serious area plan required upon finding of failure of moderate area to attain the PM-10 NAAQS under 188(b)(2)) and 189(d) (plan revisions required upon failure of serious area to attain the PM-10 NAAQS). Thus, EPA has noted previously that contingency measures should consist of other available control measures not contained in the applicable control strategy [57 FR at 13543]. In designing its contingency measures, the State should also take into consideration the potential nature and extent of any attainment shortfall for the area. The magnitude of the effectiveness of the measures should be calculated to achieve the appropriate percentage of the actual emission reductions required by the SIP control strategy to bring about attainment. EPA has recommended that contingency measures provide the emission reductions required in 1 year's increment of RFP.

Once moderate areas are subsequently reclassified as serious, the affected States must ensure that adequate contingency measures, as described above, are in place for such areas. This is explicitly required under the statute. Section 189(b)(1) requires areas reclassified as serious to submit "an implementation plan." Under section 172(c), in

turn, "plan provisions" required under Part D must provide for the implementation of contingency measures. Accordingly, for those moderate areas reclassified as serious, if all or part of the contingency measures become part of the required serious area control measures (i.e., BACM), then additional contingency measures must be submitted. For example, this may be the case where a moderate area was reclassified as serious for its failure to attain and has implemented all of the contingency measures contained in the moderate PM-10 plan for the area. Further, the affected States must ensure that serious areas have adequate contingency measures considering, among other things, new information about the potential attainment shortfall for the newly reclassified serious area. The States must submit contingency measures for serious areas or otherwise demonstrate that adequate measures are in place within 18 months of reclassification, as an adjunct of the required serious area BACM submittal [see section 189(b)].

VIII. Quantitative Milestones and Reasonable Further Progress

A. General Discussion

PM-10 nonattainment area SIP's must include quantitative milestones which are to be achieved every 3 years until the area is redesignated attainment and which demonstrate RFP toward attainment by the applicable date [see section 189(c) of the amended Act]. Section 171(1) of

the Act defines RFP as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part [Part D] or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date."

A discussion of these requirements follows.

B. Reasonable Further Progress

Historically, for some pollutants RFP has been met by showing annual incremental emission reductions sufficient generally to maintain at least linear progress toward attainment by the specified deadline. Requiring linear progress reductions in emissions to maintain RFP may be appropriate in four situations:

1. when pollutants are emitted by numerous and diverse sources,

2. where the relationship between any individual source and the overall air quality is not explicitly quantified,

3. where a chemical transformation is not involved, and 4. where the emission reductions necessary to attain the standard are inventory-wide.

For example, in those areas where the nonattainment problem is attributed to area type sources (e.g., fugitive dust, residential wood combustion, etc.), RFP should be met by showing annual incremental emission reductions sufficient

generally to maintain linear progress towards attainment. Total PM-10 emissions should not remain constant or increase from one year to the next in such an area.

Requiring linear progress reductions in emissions to maintain RFP is less appropriate:

1. where there are a limited number of sources,

2. where the relationships between individual sources and air quality are relatively well-defined,

3. where the emission control systems utilized (e.g., at major point sources) will result in swift and dramatic emission reductions, and

4. where there are chemical transformations that form PM-10.

For example, in those areas where the PM-10 nonattainment problem is attributed to a few stationary sources, RFP should be met by "adherence to an ambitious compliance schedule"[30] which is likely to periodically yield significant emission reductions. Adherence to "an ambitious compliance schedule" does not necessarily mean that it would be unreasonable to achieve annual incremental emission reductions or generally linear progress, however.

The SIP's for PM-10 nonattainment areas must include

---

[30]U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, "Guidance Document for Correction of Part D SIP's for Nonattainment Areas," Research Triangle Park, North Carolina, January 27, 1984, Page 25.

detailed schedules for compliance with emission regulations in the areas and accurately indicate the corresponding annual emission reductions to be realized from each milestone in the schedule. In reviewing the SIP, EPA will determine whether the annual incremental emission reductions to be achieved are reasonable in light of the statutory objective to ensure timely attainment of the PM-10 NAAQS. Additionally, EPA believes that it is appropriate to require early implementation of the most cost effective control measures (e.g., controlling fugitive dust emissions at the stationary source) while phasing in the more expensive control measures, such as those involving the installation of new hardware.

Section 189(c) provides that the quantitative milestones submitted by a State for an area also must demonstrate RFP for the area. Thus, EPA will determine an area's compliance with RFP in conjunction with determining its compliance with the quantitative milestone requirement. Because RFP is an annual emission reduction requirement and the quantitative milestones are to be achieved every three years, when a State demonstrates an area's compliance with the quantitative milestone requirement it should also demonstrate that RFP has been achieved during each of the relevant three years. Thus, in the discussion of quantitative milestones below, we refer to both the "RFP/milestone" submittal dates, achievement dates and

demonstration (or reporting) requirements.

C. Quantitative Milestones

1. Nature of Quantitative Milestones

As mentioned above, PM-10 nonattainment SIP's are to contain quantitative milestones [see section 189(c)]. These quantitative milestones should consist of elements which allow progress to be quantified or measured. Specifically, States should submit milestones providing for the amount of emission reductions adequate to achieve the NAAQS by the applicable attainment date. The following are examples of measures which support and demonstrate how the milestones may be met:

a. percent implementation of various control strategies (e.g., pave 50 percent of culpable streets, replace 75 percent of residential wood heaters with natural gas heating units);

b. percent compliance with implemented control measures; and

c. adherence to a compliance schedule.

2. RFP/Milestone Due Dates

As mentioned above, PM-10 nonattainment SIP's are to contain quantitative milestones which are to be achieved every 3 years until the area is redesignated attainment. There is a gap in the law in that the text of section 189(c)

does not articulate the starting point for counting the 3-year period. The EPA believes it is reasonable to begin counting the 3-year milestone deadline from the due date (and not the submittal date) for the applicable moderate area implementation plan revision. See section III.C.1.(f) of the General Preamble (57 FR 13539) for an explanation of why EPA believes it is appropriate to begin counting the 3-year milestone deadline from the SIP due date.

The first "RFP/milestone" achievement date for those areas initially designated as nonattainment for PM-10 by operation of law when the Act was amended, will be the moderate area attainment date of December 31, 1994, as stated in section III.C.1.f. of the General Preamble (57 FR 13539). The RFP/milestone achievement date would normally be November 15, 1994, 3 years after the SIP due date of November 15, 1991. The achievement date was delayed 46 days, however, because the de minimis timing differential made it administratively impracticable to require separate milestones and attainment demonstrations for these areas. Thus, for these initial areas EPA's policy is to deem that the emissions reductions progress made between the SIP submittal due date and the attainment date as sufficient to satisfy the milestone requirement [57 FR 13539].

Thus the initial RFP/milestone will be met by showing that emission reductions scheduled to be made between the SIP due date and the attainment date for these moderate

areas were actually achieved. Most of the emission reductions will result from implementation of RACM (including RACT) adopted as part of the moderate area SIP. The Act requires that RACM be implemented by December 10, 1993 in the initial PM-10 nonattainment areas [see section 189(a)].

Subsequent RFP/milestones for these initial PM-10 nonattainment areas that are reclassified as serious will be due every three years after the original due date for the moderate area SIP.[31] Therefore, the second RFP/milestone for the initial nonattainment areas that are reclassified as serious must be achieved by November 15, 1997. The third RFP/milestone achievement date will be November 15, 2000, etc. These RFP/milestones will be met by quantifying the annual incremental emission reductions resulting from implementation of BACM/BACT (required within 4 years after

[31]The plain terms of section 189(c) require that milestones be achieved "every 3 years until the area is designated nonattainment" and, therefore, do not contemplate any breaks in the milestones due to an area's reclassification. Further, reclassifying an area to serious does not obviate the State from controls and emission reductions required in the moderate area implementation plan. See section 189(b)(1). A continuous series of control measures must be implemented in PM-10 nonattainment areas beginning with RACM (including RACT) and followed by contingency measures which are to be implemented if the moderate area fails to attain. Next, BACM (including BACT) must be implemented within 4 years after the area is reclassified as serious. Subsequently, it may be necessary to implement additional control measures beyond BACM/BACT to attain the NAAQS. Therefore, the structure of the Act requires a series of measures which can provide for RFP/milestones.

the area is reclassified as serious) and additional measures included in the final serious area SIP that are adequate to achieve the NAAQS by the applicable attainment date. The annual incremental emission reductions must be sufficient to assure attainment by not later than December 31, 2001. In some cases it may also be appropriate to require that the annual incremental emission reductions maintain at least linear progress toward attainment, as discussed earlier.

3. RFP/Milestone Report

The State must demonstrate to EPA, within 90 days after the milestone achievement date, that the SIP measures are being implemented and the RFP/quantitative milestones have been met [see section 189(c)(2)]. The RFP/milestone report must be submitted from the Governor or Governor's designee to the Regional Administrator of the respective EPA Regional Office which serves the State where the affected area is located.

The RFP/milestone report must contain technical support sufficient to document completion statistics for appropriate milestones. For example, the demonstration should graphically display RFP over the course of the relevant 3 years and indicate how the emission reductions achieved to date compare to those required or scheduled to meet RFP and the required milestones. The calculations (and any assumptions made) necessary to determine the emission reductions to date should also be submitted. The

demonstration should also contain an evaluation of whether the PM-10 NAAQS will be attained by the projected attainment date in the SIP, i.e., answer the question "Are the emission reductions to date sufficient to ensure timely attainment?".

Within 90 days of its receipt, EPA must determine whether or not the State's demonstration is adequate and meets all the requirements discussed above. The EPA will notify the State of its determination by sending a letter to the appropriate Governor or Governor's designee.

4. Failure to Submit RFP/Milestone Report or Meet RFP/Milestones

If a State fails to submit the RFP/milestone report within the required timeframes or if EPA determines that the State has not met any applicable RFP/milestone, EPA shall require the State, within 9 months after such failure or determination to submit a plan revision that assures that the State will achieve the next milestone (or attain the PM-10 NAAQS, if there is no next milestone) by the applicable date [see section 189(c)(3)]. For example, with respect to RFP, if the required annual emission reductions are not achieved for the relevant years according to the RFP schedule and the implementing milestone requirement, EPA will require the State to submit a SIP revision so that these deviations can be corrected and attainment assured by the applicable date. This may also necessitate implementation of appropriate contingency measures pursuant

to section 172(c)(9).

Note also that failure to meet RFP, if not expeditiously corrected, could also result in the application of sanctions as described in sections 110(m) and 179(b) of the amended Act [pursuant to a finding under section 179(a)(4)].

_____
Date

_____